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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|-------------------------------------|
| 10/801,918 | 03/16/2004 | Herman Altman | 132733 | 3090 |
| 7590 | 08/30/2005 | | | EXAMINER KEANEY, ELIZABETH MARIE |
| Dean D. Small Armstrong Teasdale LLP Suite 2600 One Metropolitan Square St. Louis, MO 63102 | | | ART UNIT 2882 | PAPER NUMBER |
| DATE MAILED: 08/30/2005 | | | | |

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | |
|------------------------------|------------------------|---------------------------------|
| Office Action Summary | Application No. | Applicant(s) |
| | 10/801,918 | ALTMAN, HERNAN <i>(P.M.)</i> |
| Examiner | Art Unit | |
| Elizabeth Keaney | 2882 | |

- The MAILING DATE of this communication appears on the cover sheet with the correspondence address -

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 31 May 2005.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-17 and 19-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-17 and 19-29 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 16 March 2004 is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____. |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____. | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: _____. |

DETAILED ACTION

Response to Arguments

Applicant's arguments, see page 8, lines 1-2, filed 31 May 2005, with respect to the rejection(s) of claim(s) 1-7, 11, 12, 14-18 and 24-26 under 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Eisenberg et al. (US Patent Application Publication 2003/0128801; hereinafter Eisenberg).

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 14 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 14 recites the limitation "the C-arm" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the

applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1 and 3-13 are rejected under 35 U.S.C. 102(e) as being anticipated by Eisenberg.

Re claim 1: Eisenberg discloses, in figure 2 and throughout the disclosure, a method of examining a patient, the method comprising:

- aligning a patient table (22) in an opening of a gantry (20) that includes a CZT photon detector (26; paragraph 88, line 6) and an x-ray source (24);
- imaging a patient utilizing a first imaging modality during a first portion of a scan using the CZT detector; and
- imaging a patient utilizing a second imaging modality during a second portion of the scan using the CZT detector wherein the second imaging modality is different than the first imaging modality (paragraph 87, lines 3-6).

Re claim 3: Eisenberg discloses moving the patient table along at least one of a patient table orthogonal axis when imaging the patient utilizing at least one of the first imaging modality and second imaging modality (paragraph 58, lines 20-21).

Re claim 4: Eisenberg discloses rotating the gantry around a longitudinal axis of the patient table when imaging the patient utilizing at least one of the first imaging modality and the second imaging modality (paragraph 110, lines 21-24).

Re claim 5: Eisenberg discloses the x-ray source being configured to emit x-rays in a beam having a predetermined fan angle (paragraph 110, lines 9-13), the method further comprising rotating the gantry around a longitudinal axis of the patient table less than one hundred and eighty degrees of rotation when imaging the patient utilizing at least one of the first imaging modality and the second imaging modality (paragraph 110, lines 21-24).

Re claim 6: Eisenberg discloses the x-ray source being configured to emit x-rays in a beam having a predetermined fan angle (paragraph 110, lines 9-13), the method further comprising rotating the gantry around a longitudinal axis of the patient table approximately one hundred and eighty degrees plus the fan angle of rotation when imaging the patient utilizing at least one of the first imaging modality and the second imaging modality (paragraph 110, lines 21-24).

Re claim 7: Eisenberg discloses moving at least one of the CZT photon detector and the patient table to follow a contour of the patient during at least a portion of a scan (paragraph 54, lines 13-19).

Re claim 8: Eisenberg discloses a radiopharmaceutical and wherein imaging the patient utilizing a first imaging modality comprising imaging the patient using a nuclear medicine modality (paragraph 55, lines 4-5).

Re claim 9: Eisenberg discloses imaging the patient using a nuclear medicine modality comprising imaging the patient using SPECT (paragraph 55, lines 4-5).

Re claim 10: Eisenberg discloses imaging the patient using a nuclear medicine modality comprising imaging the patient using a pair of photon detectors using a SPECT modality (paragraph 87, lines 3-6).

Re claim 11: Eisenberg discloses imaging a patient utilizing a first imaging modality comprises imaging the patient using a computer tomography modality (paragraph 55, line 2).

Re claim 12: Eisenberg discloses imaging the patient using a CT modality comprises imaging the patient using a cone-beam CT modality (paragraph 69, line 14).

Re claim 13: Eisenberg discloses a method further comprising: monitoring a cyclic physiological function within the patient and triggering at least one of the first modality and the second modality during at least one preselected portion of the cyclical physiological function (paragraph 60, lines 1-6).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2 and 14-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eisenberg.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Eisenberg as applied to claim 1 above, and further in view of Silver et al. (US Patent 6,466,638; hereinafter Silver).

Re claims 2 and 14: Eisenberg teaches all the limitations as shown above.

However, Eisenberg fails to teach or fairly suggest the gantry comprising a C-arm unit.

Silver discloses the substitution of a c-arm unit for an o-ring unit (column 1, lines 22-29).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute a c-arm unit in the gantry of Eisenberg because it allows easier access to the patient for simultaneous intervention by medical personnel (Silver; column 1, lines 24-25).

Claims 14-17 and 19-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eisenberg in view of Silver.

Re claim 14: Eisenberg discloses, in figure 2 and throughout the disclosure, an imaging system comprising:

- a gantry unit (20) having an x-ray source (24) for generating x-rays and a CZT detector (26; paragraph 88, line 6) configured to detect emission gamma photons and transmission x-ray photons (paragraph 87, lines 3-6).
- the gantry unit moving the x-ray source and detector along an image acquisition path between at least first and second imaging positions (paragraph 110, lines 21-24).

However, Eisenberg fails to teach or fairly suggest the use of a C-arm gantry unit.

Silver discloses the substitution of a c-arm unit for an o-ring unit (column 1, lines 22-29).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute a c-arm unit in the gantry of Eisenberg because it allows easier access to the patient for simultaneous intervention by medical personnel (Silver; column 1, lines 24-25).

Re claim 15: Eisenberg discloses the gantry is at least one of rotatably coupled to a gantry holder and slidably coupled to the gantry holder (paragraph 58, lines 19-20).

Re claim 16: Eisenberg discloses the x-ray source being configured to emit x-rays in a beam having a predetermined fan angle (paragraph 110, lines 9-13) and wherein the gantry is configured to slidably translate along the gantry holder an angular distance of approximately one hundred eighty degrees plus the fan angle of the x-ray source (paragraph 110, lines 21-24).

Re claim 17: Eisenberg discloses the x-ray source comprising a cone-beam x-ray source (paragraph 69, line 14).

Re claim 19: Eisenberg discloses, in figure 2 and throughout the disclosure, the detector comprising a pair of detectors (26) inclined at an angle with respect to each other.

Re claim 20: Eisenberg discloses, in figure 2 and throughout the disclosure, the detector comprising a pair of detectors inclined at an angle of approximately ninety degrees with respect to each other.

Re claim 21: Eisenberg discloses at least one of the pair of detectors comprises CZT (paragraph 88, line 6).

Re claim 22: Eisenberg discloses, in figure 2 and throughout the disclosure, at least one of the pair of detectors (26) is positioned substantially perpendicularly opposed to the x-ray source (24).

Re claim 23: Eisenberg discloses, in figure 2 and throughout the disclosure, the at least one of the pair of detectors (26) that is positioned substantially perpendicularly opposed to the x-ray source (24) comprises CZT (paragraph 88, line 6).

Re claim 24: Eisenberg discloses a patient table configured to translate along at least one of three axis (paragraph 58, lines 20-21).

Re claim 25: Eisenberg discloses the system to be configured to control at least one of the patient table and the gantry to cause the detector to follow a contour of an object to be scanned (paragraph 58, lines 19-22).

Re claim 26: Eisenberg discloses an imaging isocentric area located between the x-ray source and the detector, the imaging isocentric area remaining substantially constant when the gantry moves along the image acquisition path (paragraph 60, lines 1-6).

Re claim 27: Eisenberg discloses, in figure 2 and throughout the disclosure, the imaging system comprises a gantry support base wherein the support base is coupled

to a rail system, the rail system operable to move the gantry unit along at least one axes.

Re claim 28: Eisenberg discloses, in figure 2 and throughout the disclosure, the rail system being coupled to at least one of the floor, a ceiling and a wall of an examination room.

Re claim 29: Eisenberg discloses, in figure 2 and throughout the disclosure, the imaging system comprising a gantry support base wherein the gantry support base is mobile support base.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- US Patent Application Publication 2002/0090050 discloses a system wherein a single detector is used for both PET and CT scans. However, the system fails to disclose the detector as comprising CZT.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elizabeth Keaney whose telephone number is (571)272-2489. The examiner can normally be reached on Monday,Tuesday,Thursday,Friday 7:30-6:00.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Glick can be reached on (571)272-2490. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


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DAVID V. BRUCE
PRIMARY EXAMINER